

RATIONALE FOR POLICY REQUIRING
COVERING OF POTABLE WATER STORAGE STRUCTURES

Any body of water which is open to the atmosphere (in ground or elevated tank, storage ponds, standpipe, etc.) is subject to contamination from natural precipitation, windblown dust and other airborne contaminants; such sources may contain dissolved, solid or particulate-associated contaminants such as pesticides, microorganisms and other organic and inorganic contaminants, metals etc. In addition, birds and animals may gain access to these stored waters, resulting in contamination by droppings, bodies or feathers etc. Animals and birds can carry and transmit microorganisms that are pathogenic to man (Salmonella species etc.). A recent paper (Am. J. Pub. Hlth 76. 424, 1986) suggests that water systems that are unprotected from contact with birds specifically may become contaminated and a source of outbreaks of human campylobacteriosis; in the case of ground level storage there is the added potential for surface run-off, carrying a variety of contaminants including various species of worms and insects. All open waters can potentially serve as breeding grounds for various species of flying insect, e.g., midges, mosquitoes; a cover provided with screened venting would reduce the number of adult insects reaching the water source. Lower food chain aquatic organisms (algae, copepods) are likely to thrive, especially in the summer months. Multiplication of these biota could cause taste and odours or infestations in the distribution system.

As well, there exists a potential for civil liability on the part of the water suppliers for (a) illness or mishap as a result of the water becoming contaminated while being stored in an open reservoir, (b) accidents occurring as a result of persons gaining access to uncovered reservoirs, if they are not adequately protected by fencing and signs.

The Ontario Drinking Water Objectives state that their primary objective is for the protection of public health. Further, "any water intended for human consumption should not contain any disease-causing organisms or hazardous concentrations of toxic chemicals or radioactive substances".

It follows, that there can be no justification for subjecting consumers to the risk of contamination associated with the use of uncovered potable water reservoirs. To do so violates the intent of the Ontario Drinking Water Objectives.

As a result of this risk of contamination and the fact that consumers will directly ingest water from such reservoirs, it must be recommended that all potable water reservoirs be permanently and effectively covered.

The requirement (or a requirement for treatment subsequent to open reservoir storage) is implicitly stated in the Ministry policy on "Treatment Requirements for Municipal and Communal Waterworks using Groundwater Sources". This policy, under "Statement of Principles" indicates that water originating from ground sources and transmitted with or without treatment to uncovered storage reservoirs is deemed not to be groundwater. Since such waters may be subject to similar contamination potentials as exist for surface water sources the Treatment Requirements for Municipal and Communal Water Works using Surface Water Sources policy will apply.